

PATENT

Atty. Dkt. No. ATT-027PUS (ATT/2000-0575)

**REMARKS**

In view of the above amendment and the following discussion, the Applicants submit that none of the claims now pending in the application are made obvious under the provisions of 35 U.S.C. § 103. Thus, the Applicants believe that all of these claims are now in allowable form.

**I. REJECTION OF CLAIMS 2, 3, 8 AND 9 UNDER 35 U.S.C. § 103****A. Claims 2 and 8**

The Examiner has rejected claims 2 and 8 in the Office Action under 35 U.S.C. § 103 as being unpatentable over by Zang, et al. (Titled, "Photonic Slot Routing in All-Optical WDM Mesh Networks", published 1999, hereinafter referred to as "Zang") in view of Kobayashi, et al. (Japanese Patent Number 409214503A, Published August 15, 1997, hereinafter referred to as "Kobayashi") and further in view of Jalali, et al. (US Patent 5,793,907, issued August 11, 1998, hereinafter referred to as "Jalali"). Applicants respectfully traverse the rejection.

Zang teaches a photonic slot routing in all-optical WDM mesh network. Zang teaches an approach for assigning slot destinations in a photonic slot routing network. (See Zang, Abstract.) Zang shows an architecture that includes an optical switch, a transmit switch and a receive switch.

Kobayashi teaches an optical delay line buffer. Kobayashi teaches a coupler/demultiplexer connected to a plurality of circulators and a plurality of delay lines connected to the plurality of circulators. (See Kobayashi, Figs 2 and 3.)

Jalali teaches a method and apparatus for a wavelength selective true-time delay for an optically controlled device. Jalali teaches an optical delay device that transmits a plurality of wavelengths via tunable laser. (See Jalali, Col. 6, Lines 30-46; Figure 4.)

The Applicants respectfully submit that Zang, Kobayashi and Jalali, alone or in any permissible combination, fail to teach, show or suggest an optical packet-switched ring network comprising a circulator coupled to a tunable laser and a demultiplexer coupled to the circulator followed by delay lines and a reflector. Specifically, Applicants' independent claims 2 and 8 recite:

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2. An optical packet-switched ring network, comprising:  
a node including

an optical switch coupled to a fiber of the ring network;  
a transmit switch coupled to the optical switch;  
a wavelength stacking assembly coupled to the transmit switch,  
wherein the wavelength stacking assembly includes a tunable laser, a circulator coupled to the tunable laser, a demultiplexer coupled to the circulator followed by delay lines and a reflector;  
a receive switch coupled to the optical switch; and  
a wavelength unstacking assembly coupled to the receive switch.

(Emphasis Added)

8. A method for transmitting and receiving stacked packets on a ring network comprising:

stacking packets of varying wavelengths to form a composite transmit data packet;  
buffering the transmit data packet in a transmit switch;  
transmitting the transmit data packet onto the ring network via an optical switch;  
receiving a receive data packet via the optical switch;  
buffering the receive data packet in a receive switch;  
unstacking the receive data packet; and  
stacking the transmit data packet using a tunable laser, a circulator coupled to the tunable laser, a demultiplexer coupled to the circulator followed by delay lines and a reflector. (Emphasis Added.)

Applicants' invention teaches an optical packet-switched ring network comprising a circulator coupled to a tunable laser and a demultiplexer coupled to the circulator followed by delay lines and a reflector. The Applicants' invention teaches that a single circulator is used, followed by a demultiplexer, multiple delay lines and a reflector. (See Applicants' Specification, Page 4, Lines 14-24; Figure 2.)

Zang, Kobayashi and Jalali, either individually or in any permissible combination, fail to teach, show or suggest the Applicants' invention. The Examiner concedes that Zang fails to disclose a tunable laser, a circulator coupled to the tunable laser, a demultiplexer coupled to the circulator followed by delay lines and a reflector. (See Office Action 2/15/05, Page 3, Lines 5-8.) However, the Examiner then asserts that Kobayashi and Jalali bridge the substantial gap left by Zang. The Applicants respectfully submit that the Examiner has interpreted Kobayashi too broadly. The "demultiplexer" referred to in Kobayashi is not a "demultiplexer", but rather simply an

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amplifier. The combination of reference numerals 10a and 11a, in Kobayashi, is used to amplify the light signal with an excitation light emitted from reference numeral 11a. (See Kobayashi, Figure 2.) The coupler (1), disclosed in Kobayashi, is more similar to the demultiplexer disclosed in the Applicants' invention. As such, Kobayashi teaches a demultiplexer followed by a plurality of circulators followed by a plurality delay lines and reflectors. In contrast, the Applicants' invention is more efficient because the Applicants teach using a single circulator followed by a demultiplexer, delay lines and a single reflector. In addition, Jalali fails to bridge the substantial gap left by Zang because Jalali only teaches using a tunable laser to transmit a plurality of wavelengths in an optical delay device. (See Jalali, Col. 6, Lines 30-46; Figure 4.) Therefore, the combination of Zang, Kobayashi and Jalali does not teach or suggest Applicants' invention as recited in independent claims 2 and 8. As such, the Applicants respectfully request the rejection be withdrawn.

**B. Claims 3 and 9**

The Examiner has rejected claims 3 and 9 in the Office Action under 35 U.S.C. § 103 as being unpatentable over by Zang in view of Kobayashi. Applicants respectfully traverse the rejection.

The teachings of Zang and Kobayashi have been discussed above. The Applicants respectfully submit that Zang and Kobayashi, alone or in any permissible combination, fail to teach, show or suggest an optical packet-switched ring network comprising a circulator coupled and a demultiplexer coupled to the circulator followed by delay lines and a reflector. Specifically, Applicants' independent claims 3 and 9 recite:

3. An optical packet-switched ring network, comprising:  
a node including

- an optical switch coupled to a fiber of the ring network;
- a transmit switch coupled to the optical switch;
- a wavelength stacking assembly coupled to the transmit switch;
- a receive switch coupled to the optical switch; and
- a wavelength unstacking assembly coupled to the receive switch,

wherein the wavelength unstacking assembly includes a circulator, a demultiplexer coupled to the circulator followed by delay lines and a reflector. (Emphasis Added.)

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9. A method for transmitting and receiving stacked packets on a ring network comprising:

- stacking packets of varying wavelengths to form a composite transmit data packet;
- buffering the transmit data packet in a transmit switch;
- transmitting the transmit data packet onto the ring network via an optical switch;
- receiving a receive data packet via the optical switch;
- buffering the receive data packet in a receive switch;
- unstacking the receive data packet; and
- unstacking the receive data packet using a circulator, a demultiplexer coupled to the circulator followed by delay lines and a reflector. (Emphasis Added.)

Applicants' invention teaches an optical packet-switched ring network comprising a circulator coupled and a demultiplexer coupled to the circulator followed by delay lines and a reflector. The Applicants' invention teaches that a single circulator is used, followed by a demultiplexer, multiple delay lines and a reflector. (See Applicants' Specification, Page 4, Lines 14-24; Figure 2.)

Zang and Kobayashi, either individually or in any permissible combination, fail to teach, show or suggest the Applicants' invention. The Examiner concedes that Zang fails to disclose a tunable laser, a circulator coupled to the tunable laser, a demultiplexer coupled to the circulator followed by delay lines and a reflector. (See Office Action 2/8/05, Page 3, Lines 5-8.) However, the Examiner then asserts that Kobayashi bridges the substantial gap left by Zang. The Applicants respectfully submit that the Examiner has interpreted Kobayashi too broadly. The "demultiplexer" referred to in Kobayashi is not a "demultiplexer", but rather simply an amplifier. The combination of reference numerals 10a and 11a, in Kobayashi, is used to amplify the light signal with an excitation light emitted from reference numeral 11a. (See Kobayashi, Figure 2.) The coupler (1), disclosed in Kobayashi, is more similar to the demultiplexer disclosed in the Applicants' invention. As such, Kobayashi teaches a demultiplexer followed by a plurality of circulators followed by a plurality delay lines and reflectors. In contrast, the Applicants' invention is more efficient because the Applicants teach using a single circulator followed by a demultiplexer, delay lines and a single reflector. Therefore, the combination of Zang and Kobayashi does not teach or suggest Applicants' invention as

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recited in independent claims 3 and 9. As such, the Applicants respectfully request the rejection be withdrawn.

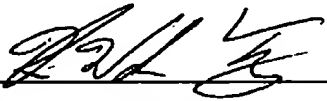
### Conclusion

Thus, the Applicants submit that all of these claims now fully satisfy the requirements of 35 U.S.C. §103. Consequently, the Applicants believe that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring the issuance of a final action in any of the claims now pending in the application, it is requested that the Examiner telephone Mr. Kin-Wah Tong, Esq. at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

5/9/05  
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